

Analysis on the Development Level and Dynamic Factors of the Integration of Culture and Tourism Industry

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Abstract. Culture is the soul of tourism, and tourism is the carrier of culture. Tourism industry and cultural industry have natural coupling. This paper takes the Yangtze River Delta region as the research object and introduces the concept of coupling coordination degree. Based on the previous studies, it continues to quantify the integration level of culture and tourism industry in recent years, and applies cutting-edge panel metrology analysis technology from market demand, technology innovative and functional integration, to explore the dynamic mechanism of the integration of culture and tourism industry. The research results show that technological innovation can promote the integration of culture and tourism industry; the infiltration of cultural education function can also promote the integration of culture and tourism industry. The research conclusions of the article have certain enlightenment significance for industrial development and the integration of the industries. Finally, the article proposes that the relevant administrative departments should give relative freedom of market orientation. Cultural and tourism practitioners should make full use of favorable external conditions such as applied high-tech, to realize the integration and development of culture and tourism industry.

Keywords: Culture and tourism, coupling coordination degree, industry integration, dynamic factors, panel measurement analysis technology.

1 Introduction

In the document “Decision of the Central Committee of the Communist Party of China on Deepening the Reform of the Cultural System and Promoting the Great Development and Prosperity of Socialist Culture” in 2011, it is proposed to promote the integration and development of cultural industries and tourism industries, extend the cultural industry chain, and increase the added value. In 2014 the State Council promulgated the “Opinions on Promoting the Integration of Cultural Creativity and Design Services and Related Industries”, which proposed to encourage cultural creativity and design services to enter the tourism industry, promote the development of characteristic cultural tourism, and promote the development of new formats such as participatory and experiential. Nowadays, under the guidance of the new development concept, during the period of national strategic opportunity to build a modern economic system, promoting the integration of culture and tourism industry will help optimize the industrial structure, find new economic growth points, and boost the Chinese national culture.

In the 1960s, Rosenberg believed that Technology Convergence was the cornerstone of industrial fusion research¹. With the development of high technology, the industrial boundary has gradually become blurred, and the industries have penetrated into each other and merged into new industries, forming a new economic growth point². The tourism industry has a high degree of relevance and comprehensiveness, while the cultural industry has strong penetration and radiation power to other industries. The integration of culture and tourism industry is an inevitable trend of economic and social development and industrial development. At the same time, as the level of people's needs has also increased, they have gradually turned to the needs of the spiritual level, such as science and education, culture and health, tourism and

¹ Rosenberg N. Technological Change in the Machine Tool Industry: 1840-1910[J]. The Journal of Economic History, 1963(23):414 - 446.

² Hou bing, Zhou xiaoqian. Measurement and evaluation of the integration of cultural industry and tourism industry in the Yangtze river delta region [J]. Economic geography, 2015,35(11):211-217.

other development and hedonic consumption, that is, cultural consumption. People's tourism needs have gradually increased from sightseeing to cultural experience, mainly in museum tourism, heritage tourism, and religious tourism. In 1985, the World Tourism Organization proposed a narrow definition of "cultural tourism"³, namely "the movement of people for cultural motives, such as research travel, performing arts, cultural travel, visiting historical sites, studying nature, folklore and art, travel of religious pilgrimages, festivals and other cultural events."

Culture is the soul of tourism. It can enrich the types of tourism activities, improve the level of tourism experience, and enhance the creative connotation and core value of the tourism industry. Tourism is an important carrier of cultural communication. It spreads the image of the country, inherits the national culture, and enhances the quality of citizens. The important role is to expand the consumer market and communication effect of the cultural industry. The tourism industry and the cultural industry have natural coupling. The two complement achieve a win-win situation in the development of integration. How to integrate the two has become a hot spot in the academic circles in recent years.

2 Literature Review

Western scholars have studied the culture and tourism industry earlier, mostly focusing on the mutual influence and integration of the two major industries and the new formats and products generated by the integration. For example, A.M. Ogaboh Agba (2010) studied the impact of the development of the tourism industry in the Krystal Region of Nigeria on the Eifike cultural industry in Nigeria, and proposed to re-establish tourism policies to promote the development of the cultural tourism industry. Jurenienė V. (2011) explored the interactive relationship between Lithuanian cultural heritage and cultural tourism industry. Museum tourism, performing arts and festivals are also typical products of the cultural and tourism industry. It can highlight local culture and art and effectively activate and promote local culture. Beata Krakowiak (2013) combs the development of the Polish Museum and analyzes the various cultural activities carried out through the museum, emphasizing the important role of the museum in the development of Polish cultural tourism.

Chinese scholars' research on the integration of culture and tourism industry is mainly reflected in basic theoretical research and empirical research. Zhang Haiyan (2010) theoretically explores five specific forms of concrete integration of the cultural industry and tourism industry. Jiang Yongchang (2013), based on the analysis of the economic significance and power demand of tourism industry integration, expounds the realization mechanism of the deconstruction and reconstruction of the value chain of the cultural and tourism industry integration development. Zhao Lei and Yu Yuyi (2014) constructed a dynamic model for the integration of tourism industry and cultural industry from the four levels of thrust, pull, support and resistance of industrial integration. Hou Bing, Zhou Xiaoqian (2015) measured, analyzed and evaluated the development level of 16 cultural cities and tourism industries in the Yangtze River Delta region and their integration and development. Zhou Chunbo (2018), based on collaborative innovation thinking, using frontier panel metrology technology analysis, found that the process of China's cultural and tourism industry integration has spatial spillover effect and spatial feedback mechanism. Consumer demand, institutional environment and technological innovation are the main driving forces.

The research results have generally constructed an analytical framework covering the dynamics, processes and mechanisms of cultural and tourism industry, providing a solid theoretical basis for the subsequent research to improve the theoretical framework and enrich the empirical application. However, there is little empirical research on the dynamic mechanism of the integration of culture and tourism industry. This paper will introduce the concept of coupling coordination degree, quantify the integration status of culture and tourism industry, and apply spatial panel measurement analysis from market demand, technology innovative and functional integration, to explore the dynamic mechanism of the integration of culture and tourism industry.

³ Huang rui, Hou Dan. Dynamic mechanism and development path of cultural and tourism industry integration in three provinces of northeast China [J]. Contemporary economic research. 2017(10):81-89.

3 Model Construction, Indicator Selection and Data Sources

3.1 Construction of the Coordination Degree Model of Tourism Industry and Cultural Industry

This paper first introduces the coupling coordination degree model to quantify the integration level of culture and tourism industry in the Yangtze River Delta region, and evaluates its integration development status, and then constructs a multi-regression model of the integration of the Yangtze River Delta culture and the tourism industry to explore its integrated development and the dynamic mechanism.

Coupling is a physics concept, which refers to the dynamic relationship of two or more systems that influence each other and promote each other. The concept of coupling has been widely used in economics and management in recent years. Scholars are portraying the development of cultural industries and tourism industries. In terms of the relationship, the relationship between the two is generally evaluated. There is a natural coupling between the tourism industry and the cultural industry. The development of the tourism industry promotes the prosperity of the cultural industry, and the prosperity of the cultural industry promotes the development of the tourism industry⁴.

Tourism and cultural industry coupling model:

$$C_{(u_1, u_2)} = \frac{1}{2} * \frac{(U_1 * U_2)^{1/2}}{(U_1 + U_2) * (\frac{1}{2}U_1 + \frac{1}{2}U_2)} \quad (1)$$

Tourism and Cultural Industry Comprehensive Coordination Index:

$$T_{(u_1, u_2)} = \alpha U_1 + \beta U_2 \quad (2)$$

Tourism and cultural industry coupling coordination model:

$$D = (C * T)^{1/2} \quad (3)$$

In formula (1), $C_{(u_1, u_2)} \in [0, 1]$, the size of C can directly reflect the degree of coordination between the two systems of cultural industry and tourism industry. The value of C is closer to 1, indicating the better the coupling of the two systems; conversely, the poorer the coupling.

In formula (2), U_1 and U_2 are the comprehensive evaluation coefficients of tourism industry and cultural industry respectively, α is the weight of tourism industry, and β is the weight of cultural industry. Considering the development of the two industries is equally important to the economic development of the region, and reference to Weng Gangmin, Li Lingyan⁵. The value of the parameter is set, so $\alpha = \beta = 0.5$.

The calculation formula of the comprehensive evaluation coefficient of the industry is:

$$U_i = \sum w_j * y_{jt} \quad (i=1, 2; j=1, 2, 3, \dots; t=1, 2, 3, \dots, 14)$$

j is the number of industrial indicators, t is the year corresponding to each indicator, y_{jt} refers to the standardized value of the j th indicator of the industry in the t year, and w_j is the weight of the j th indicator. The larger the U_i value, the better the development of the industry, and the smaller the U_i value, the worse the industrial development.

The weight of the indicator is calculated using the entropy weight method. The calculation process is as follows.

Standardize raw data using the method of standard deviation

Since the selection of index units is different, the original data of each indicator is first standardized. In order to avoid the non-positive phenomenon when the non-classification processing is performed, all the standardized data is shifted to the right by 0.01 units. The selected indicators are positive indicators. In summary, the calculation formula is as follows:

Standardized value of the j indicator of industry i :

$$y_{ij} = \frac{x_j - x_{jmin}}{x_{jmax} - x_{jmin}} + 0.01 \quad (i=1, 2; j=1, 2, 3, \dots, n)$$

⁴ Hou bing, Zhou xiaoqian. Measurement and evaluation of the integration of cultural industry and tourism industry in the Yangtze river delta region [J]. Economic geography, 2015,35(11):211-217.

⁵ Weng gangmin, Li lingyan. Coupling coordination degree and spatial correlation analysis of integrated development of Chinese tourism and cultural industry [J]. Changsha: economic geography, 2016(1) : 178—185.

The proportion of the j indicator in the t -year:

$$s_{jt} = \frac{y_{jt}}{\sum_1^t y_{jt}} \quad (j=1, 2, \dots, n; t=1, 2, \dots, m)$$

Entropy value of the j indicator:

$$h_j = -\frac{1}{\ln m} * \sum_1^m s_{jt} \ln s_{jt} \quad (j=1, 2, \dots, n; t=1, 2, \dots, m)$$

Utility value of the j th indicator:

$$\alpha_j = 1 - h_j \quad (j=1, 2, \dots, n)$$

The weight of the j th indicator:

$$w_j = \frac{\alpha_j}{\sum_1^n \alpha_j} \quad (j=1, 2, \dots, n)$$

3.2 Regression Model Construction of the Dynamic Mechanism

With the development of the economy and society, the demand structure of consumers for spiritual and cultural life and tourism consumption is also evolving. Tourism industry and cultural industry are also constantly enriching product forms to cater to market demand, and scholars have proposed that consumer demand is one of the driving forces for the integration of China's culture and tourism industry from the perspective of industrial value chain. Zhou Chunbo (2018) has also passed Provincial panel data validates the theoretical hypothesis that cultural and tourism consumer demand can drive the integration of culture and tourism industries⁶.

On the technical level, technological innovation will promote cultural products and tourism products to enhance the original production and technology level. Through the infiltration and integration of technology, the value chain activities of different industries will infiltrate and blend in whole or in part, and then promote the new business culture. The emergence of a new type of industry. Therefore, this paper believes that technological innovation can also promote the integration of culture and tourism industry.

Ma Xuefeng (2010) believes that one of the ways to integrate various industries and tourism industry is functional integration. Each industry has its main social functions. When a clear function of an industry is also available for tourism, this function can become the entry point for the integration of the two⁷. The cultural industry has the function of cultural education that spreads culture, enhances quality, and enriches knowledge. The tourism industry also has the cultural and educational function of promoting national cultural exchanges, growing knowledge, and expanding horizons. The cultural and educational function of the cultural industry has made the cultural and educational functions of the tourism industry more prominent and deeper. At the same time, the tourism industry has opened up the way for the cultural industry to develop its functions and obtain better functional benefits. The cultural and educational functions complement the development of the two industries. Therefore, this paper believes that the cultural education function penetration can also promote the integration of culture and tourism industry.

In summary, this paper will analyze the cultural and tourism consumption needs of the Yangtze River Delta region to support the integration of cultural industry and tourism industry through spatial panel data measurement technology, and test the following two hypotheses.

Hypothesis 1: Technological innovation can promote the integration of cultural industries and tourism industries.

Hypothesis 2: The infiltration of cultural education can promote the integration of cultural industries and tourism industries.

In summary, this paper builds the following empirical model:

$$TC = \alpha_0 + \alpha_1 DE + \alpha_2 TECH + \alpha_3 CUL + \lambda TRA + \eta \quad (4)$$

Among them, TC is the level of integration of culture and tourism industry. This paper takes the above-mentioned coupling coordination degree D to quantify TC , $TC = \sqrt{C * T}$. DE stands for cultural and tourism consumption needs; $TECH$ stands for technological innovation; CI stands for cultural education function; TRA is a control variable that indicates the level of openness; α_0 , α_1 , α_2 , α_3 and λ are undetermined coefficients; η stands for error term.

⁶ Zhou chunbo. Dynamic mechanism and synergistic effect of integration of culture and tourism industry [J]. Social scientist,2018(02):99-103.

⁷ Ma xuefeng, Zhang shibing, Long maoxing. Analysis on the integration path of tourism industry [J]. Economic geography,2010,30(04):678-681.

3.3 Indicator Selection and Data Source

The National Economic Industry Classification and Code (GB/4754-2011) states that the tourism industry accommodation and catering industry, travel agencies and related services, as well as parks and scenic spots management, and the cultural industry is based on culture, sports and entertainment. The main body, including news and publishing, radio, television, film and film recording operations, culture and art industry and culture, entertainment, sports brokerage and other four categories. Based on the classification of national standards, this paper synthesizes the research on tourism industry and cultural industry related indicators in the existing literature.

Based on the principle of data availability and inter-regional consistency, the following evaluation indicators are selected to measure regional cultural industries. And the level of development of the tourism industry.

Table 1. Relevant indicators of tourism industry and cultural industry.

Tourism industry development evaluation index	1.	Domestic tourist trips / 10 thousands people
	2.	Domestic tourism income / 100 million yuan
	3.	Inbound tourist trips / 10 thousands people
	4.	Tourism earning income / million dollars
	5.	Number of travel agencies /PCS
	6.	Number of Star Hotel /PCS
	7.	Number of scenic spots of level 4A and above/PCS
Cultural industry development evaluation index	1.	Cultural industry added value / 10 thousands yuan
	2.	Total number of cultural industry institutions
Cultural and tourism consumer demand	1.	Per capita cultural and educational entertainment consumption expenditure of urban residents / yuan
	2.	Number of urban residents / people
	3.	Per capita cultural, educational and entertainment consumption expenditure of rural residents / yuan
	4.	Number of rural residents / people
Technological innovation	1.	Number of patent applications /PCS
	2.	Patent authorization amount/piece /PCS
Cultural education function penetration	1.	Number of museums /PCS
	2.	Museum visits / 10 thousands people
Openness to the outside world	1.	Total import and export / million dollars
	2.	Regional GDP / 100 million yuan

In formula (4), the measurement of cultural and tourism consumption demand (DE) is to calculate the population - weighted average of the per capita cultural and educational entertainment consumption expenditure of urban residents and rural residents in each province, and take the logarithm; Innovative commercial application can more comprehensively reflect the technological innovation ability of provincial culture and tourism⁸. Therefore, the weighted average number of patent applications and authorizations in each province is used, and logarithm is used as a proxy variable for technological innovation (TECH). Cultural Education Function Infiltration (CI), measured by the number of museums and the logarithm of the weighted average of visits; SAR, expressed as the ratio of total imports and exports to total GDP. For the official unit is the dollar index, such as tourism revenue and import and export volume, the average value of the US dollar exchange rate for the year is calculated and unified into 100 million units.

The Yangtze River Delta region has rich cultural heritage and rich tourism resources, and has the comprehensive potential for the development of cultural industry and tourism industry. However, there is a big gap between the cultural industry and the tourism industry in the region, and there is a big gap between the cultural industry and the tourism industry. This paper takes the Yangtze River Delta region

⁸ Zhou chunbo. Dynamic mechanism and synergistic effect of integration of culture and tourism industry [J]. Social scientist,2018(02):99-103.

as the research object. Through comprehensive consideration of the level of economic and social development, cultural industry level and tourism industry level, it selects 14 core cities in the Yangtze River Delta region, including Shanghai, Nanjing and Suzhou, Wuxi, Changzhou, Yangzhou, Taizhou (泰州), Zhejiang, Hangzhou, Ningbo, Huzhou, Jiaxing, Shaoxing and Taizhou (台州). In view of the publication of the “Culture and Related Industries Classification” in 2004, the cultural industry statistics are comparable in terms of time dimension. Therefore, the sample period adopts the development data of cultural industry and tourism industry for 14 years from 2004 to 2017. The data mainly comes from Shanghai Statistical Yearbook, Jiangsu Statistical Yearbook, Zhejiang Statistical Yearbook and Zhejiang Provincial Department of Culture. It is supplemented by local statistical yearbooks, and a small amount of data is checked on the government website to ensure that the authenticity, accuracy and fairness of the data.

4 Empirical Analysis of the Dynamic Mechanism of the Integration

4.1 Analysis of the Coordination Degree of Cultural Industry and Tourism Industry

The integrated development level of cultural industry and tourism industry in 14 cities in the Yangtze River delta region from 2013 to 2017 is shown in the figure 1.

From the perspective of the Yangtze River Delta region as a whole, the integration of culture and tourism industry in Jiangsu Province is not ideal. Only Shanghai, Suzhou and Hangzhou began to enter the primary coordination state in 2017, followed by Nanjing and Wuxi, except Taizhou. Other cities are still in a state of reluctance to coordinate; there is still a certain gap in the level of integration of culture and tourism industry between Jiangsu Province and Zhejiang Province and Shanghai. As for Shanghai, the level of integration of its cultural and tourism industry is steadily improving, and it is taking the lead in the Yangtze River Delta region, but the development momentum of Suzhou and Hangzhou cannot be underestimated. In Jiangsu Province, Suzhou's cultural and tourism industry integration level is in the leading position in the province, but in 2017, it encountered a development bottleneck. Taizhou is in the weakest state in both the province and the Yangtze River Delta region, and other cities develop. The level is not much different. In Zhejiang Province, the cultural and tourism industry in Hangzhou has a leading position in the development and integration. Ningbo has made the most obvious progress in three years, and other cities are in a state of steady improvement.

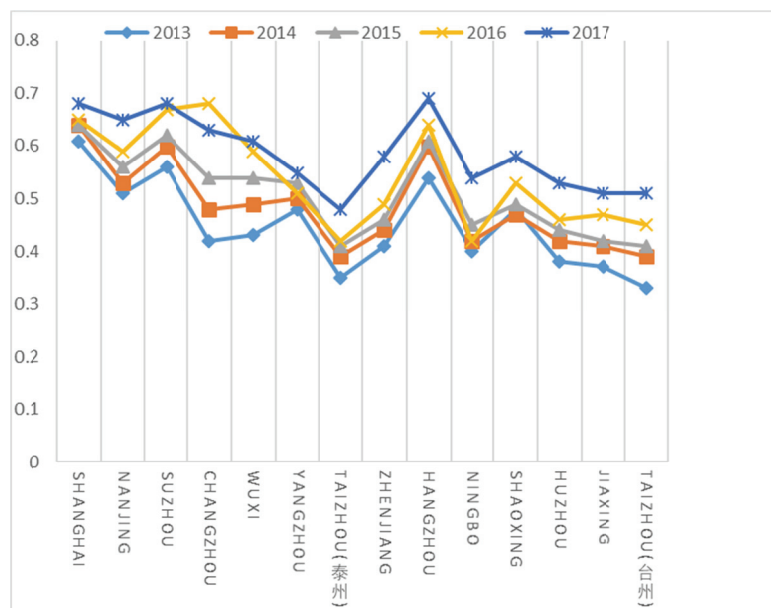


Figure 1. Coordination degree of culture and tourism industry in 14 cities in 2013-2017

The specific evaluation level of coupling coordination degree, with reference to Liao Zhongbin's research⁹, adopts the uniform distribution function method to classify the coupling coordination degree indicators of the two types of industries, as shown in Table 2.

Table 2. Coordination degree index

Coupling coordination degree (D)	code	Coordination level
0.00-0.09	1	Extreme imbalance
0.10-0.19	2	Serious disorder
0.20-0.29	3	Moderate imbalance
0.30-0.39	4	Mild disorder
0.40-0.49	5	On the verge of disorder
0.50-0.59	6	Free coordination
0.60-0.69	7	Primary coordination
0.70-0.79	8	Intermediate coordination
0.80-0.89	9	Good coordination
0.90-1.00	10	Quality coordination

In summary, the integration development of the cultural industry and the tourism industry in the 14 cities of the Yangtze River Delta in 2015-2017 is shown in Table 3.

Table 3. The development of cultural industry and tourism industry in the 14 cities of the Yangtze River Delta in 2013-2017

City	2013	2014	2015	2016	2017
Shanghai	7	7	7	7	7
Nanjing	6	6	6	6	7
Suzhou	6	6	7	7	7
Changzhou	5	5	6	7	7
Wuxi	5	5	6	6	7
Yangzhou	5	5	6	6	6
Taizhou (泰州)	4	4	5	5	5
Zhenjiang	5	5	5	5	6
Hangzhou	6	6	7	7	7
Ningbo	4	5	5	5	6
Shaoxing	5	5	5	6	6
Huzhou	4	5	5	5	6
Jiaxing	4	5	5	5	6
Taizhou (台州)	4	4	5	5	6

In the Yangtze River Delta region, the level of integration of cultural industries and tourism industry is not very high. In 2015, only the development of culture and tourism industry in Shanghai, Hangzhou and Suzhou reached the primary coordination state, and the seven cities reached a level of reluctance and coordination, half of the land. The city is on the verge of being on the verge of imbalance. As of 2017, with Shanghai as the leader, the culture and tourism industry development of six cities and autonomous regions is above the primary coordination level. In the middle two years, the integration of culture and tourism industry has achieved initial success, but the road is still long, and other cities need to accelerate their pace. In particular, Taizhou is still on the verge of being out of tune, but its coordination level tends to be better. The reason is that Shanghai, as a famous global city, has always been a tourism distribution center and a national cultural industry development center. Under the rendering of Hangzhou's millennium culture, the development level of cultural industry has been relatively high. In recent years, the "global tourism"

⁹ Liao zhongbin. Quantitative evaluation and classification system of coordinated development of environment and economy -- a case study of urban agglomeration in the pearl river delta [J]. Tropical geography, 1999,19 (2) : 171-177.

development strategy continue to accelerate the upgrading of the tourism industry, greatly improving the level of tourism industry development; Suzhou with its superior geographical location, its own high-quality tourism resources and ancient culture, the cultural and tourism industry integration development level is also in the forefront of the Yangtze River Delta region. Other cities, such as Nanjing, Jiaxing and Ningbo, have great potential. They should clarify their strengths and weaknesses, and accelerate the integration of culture and tourism industry.

4.2 Empirical Analysis of the Dynamic Mechanism of the Integration

In order to improve the reliability and validity of the panel data model estimation, the raw data is generally measured, and the model design and measurement test are standardized. The following figure is a descriptive statistical overview of the model variables within, between, and as a whole to characterize the concentration and discrete trends of the data.

Table 4. Descriptive statistical overview of model variables

	Variable	Mean	Std. Dev.	Min	Max
IC	overall	0.41	0.17	0.07	0.71
	between		0.03	0.37	0.45
	within		0.17	0.03	0.75
DE	overall	7.80	0.38	6.55	8.66
	between		0.19	7.48	8.13
	within		0.34	6.85	8.42
TECH	overall	9.51	1.20	6.41	11.69
	between		0.70	8.71	10.84
	within		0.99	7.16	10.92
CI	overall	4.57	1.56	1.34	8.22
	between		1.03	3.08	6.56
	within		1.21	1.09	7.03
TRA	overall	0.67	0.61	0.14	5.69
	between		0.53	0.22	2.15
	within		0.34	-0.33	4.21

The panel data time dimension is $t=14$, the cross-sectional dimension is $n=14$, and belongs to the long panel in the time dimension. To avoid the pseudo-regression phenomenon, the unit root test is first performed on the panel data, and the test method adopted is the Fisher test. The results showed that all variables except for CI2 were stable. After the first order difference of CI2 is checked again, the result shows that it has been stable. Final test results are shown in Table 5.

Table 5. Panel data unit root test result

variable		Inverse chi-squared(28) P	Inverse normal Z	Inverse logit t(74) L*	Modified inv. chi-squared Pm
DE	Statistic	72.6198	-4.6904	-4.9124	5.9626
	p-value	0.0000	0.0000	0.0000	0.0000
TECH	Statistic	110.9587	-6.8368	-8.0126	11.0858
	p-value	0.0000	0.0000	0.0000	0.0000
D2CI	Statistic	118.9114	-7.9528	-8.7522	12.1486
	p-value	0.0000	0.0000	0.0000	0.0000
TRA	Statistic	91.2948	-6.2013	-6.5741	8.4581
	p-value	0.0000	0.0000	0.0000	0.0000

Next, using the estimator within the clustering robust standard error group, $\rho=0.6928$, the variance of the compound perturbation term mainly comes from the variation of individual effects. Further, through the LSDV method, the results are as follows. Most of the individual dummy variables are significant, and the P value is 0, confirming that the model has an individual effect.

Table 6. Model LSDV method individual effect test result

IC	Coef.	Robust St. Err.	t-value	p-value	[95% Conf Interval]	
DE	0.135	0.047	2.85	0.005	0.041	0.228
TECH	0.065	0.018	3.67	0.000	0.03	0.1
D2CI	0.047	0.007	6.94	0.000	0.033	0.06
TRA	-0.019	0.012	-1.64	0.104	-0.043	0.004
2.CITY	-0.001	0.041	-0.03	0.979	-0.082	0.079
3.CITY	0.16	0.033	4.87	0.000	0.095	0.225
4.CITY	0.036	0.032	1.14	0.258	-0.026	0.098
5.CITY	0.11	0.032	3.46	0.001	0.047	0.172
6.CITY	0.208	0.038	5.54	0.000	0.134	0.283
7.CITY	0.21	0.036	5.76	0.000	0.138	0.282
8.CITY	0.178	0.039	4.58	0.000	0.101	0.254
9.CITY	0.03	0.034	0.9	0.37	-0.036	0.097
10.CITY	0.099	0.03	3.3	0.001	0.04	0.158
11.CITY	0.2	0.032	6.17	0.000	0.136	0.264
12.CITY	0.225	0.044	5.15	0.000	0.139	0.311
13.CITY	0.257	0.034	7.47	0.000	0.189	0.325
14.CITY	0.137	0.04	3.46	0.001	0.059	0.215
Constant	-1.59	0.234	-6.8	0	-2.051	-1.128

Then based on the Hausman test results, the fixed effect model is selected. Through the Wald test and the LM test, it is judged that the panel data has inter-group heteroscedasticity and the correlation between the groups. Therefore, using the panel to correct the standard error, the PSCE test results are as follows.

Table 7. Model PSCE test results

IC	Coef.	Std. Err.	Z	P> z	[95% Conf. Interval]	
DE	0.11432	0.02743	0.49	0.010	-0.0403324	0.0671963
TECH	0.02654	0.01220	2.18	0.005	0.0026282	0.0504525
D2CI	0.03829	0.00659	-0.06	0.021	-0.0133112	0.0125454
TRA	-0.02946	0.01744	-1.69	0.008	-0.0636603	0.0047353
T	0.02982	0.00308	9.68	0.000	0.0237862	0.0358686
_cons	-58.022	5.87751	-9.87	0.000	-69.54237	-46.50294
R-squared	=0.9094	Wald	chi2(17)	=1727.32	Prob > chi2	=0.0000

Among the above regression results, at the 95% confidence level, the P value of the independent variable culture and tourism consumption demand DE is less than 0.05, which verifies the theoretical hypothesis that Ma Xuefeng (2018) culture and tourism consumption can promote the integration of culture and tourism industry; Consumer demand is an important driving force for the integration of culture and tourism at this stage. Each new unit of cultural and tourism consumption demand will promote the integration of culture and tourism by 0.11432 units. TECH's P value is 0.005, which verifies hypothesis 1, that is, technological innovation can also promote the integration of culture and tourism industry. For each new unit of technological innovation, it will promote the integration of culture and tourism by 0.02654 units; the same cultural education The P value of the function is 0.021, which verifies hypothesis 2, that is, the penetration of cultural education function can also promote the integration of culture and tourism industry. The cultural education function permeates every new unit, which will promote the integration of

culture and tourism by 0.03829 units. In terms of control variables, the coefficient of open-ended variables is significantly negative. This may be because merely expanding the scale of import and export trade rather than improving trade quality does not promote the integration of culture and tourism industries. In addition, R-squared is 0.9094, Prob > chi2 is 0, and the goodness of fit of the model passes the test, and the model is strongly explained.

5 Conclusions and Significance

Cultural industry and tourism industry have natural coupling. Today, when material needs are met and spiritual needs are greatly improved, the integration of culture and tourism industry is the trend of the times. It not only inherits Chinese culture, enhances national quality, but also optimizes tourism experience and enriches. The form of cultural communication, while achieving the effect of 1+1>2 on industrial benefits, will help promote the quality, efficiency and dynamics of economic development.

5.1 Conclusions

Based on the research of the predecessors, this paper continues to quantify the level of integration of culture and tourism industry in recent years, and explores the dynamic mechanism of the integration of culture and tourism industry, and verifies Ma Xuefeng' Hypothesis(2018), culture and tourism consumption can promote the integration of culture and tourism industry. At the same time, the following conclusions can be drawn: First, technological innovation can promote the integration of culture and tourism industry; Second, the penetration of cultural education function can also promote the integration of culture and tourism industry.

5.2 Significance

The research conclusions of this paper have certain enlightenment significance for industrial development and the integration of the two industries. In the environment of constantly updating and iterating technology, the upgrading and development of the industry and the development of integration are indispensable for the application of high and new technology, VR, big data, artificial intelligence, blockchain, etc. Industrial development, functional upgrading, and the emergence of media to terminal products, can be the promising way. With the great improvement of the spiritual needs of the masses, the integration of cultural and educational functional culture and the tourism industry has created more innovations. Museum tourism, heritage tourism, and national festival tourism have formed a certain format. With the help of a series of high-tech, the diversity of cultural tourism is not only the case. And, the cultural and educational nature of cultural tourism have more expression, and dissemination.

For the cultural and tourism administrative departments, industry restrictions and administrative control should be appropriately relaxed, and relevant industrial support policies should be introduced. On the one hand, in the environment of supply-side demand upgrading, market-oriented cultural and industrial integration will be given greater flexibility and innovation, while giving favorable policy support and standardizing the development of the industry in the market-led cultural and tourism industry integration development. For cultural and tourism practitioners, they should maintain sensitivity to the changing trend of market demand, maintain attention to government support policies, enthusiasm for applied high-tech, fully utilize favorable external conditions, to achieve the optimal development of cultural and tourism industries.

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